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LISTS OF SPECIES

Annotated checklist of Echinoderms from Maranhão and Piauí States, Northeastern Brazil

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ABSTRACT: The present study provides the first checklist of echinoderm species that occurs in the States of Maranhão and Piauí, in Northeastern Brazil. The present compilation was produced based on an extensive bibliographical revision and on echinoderms deposited in the Invertebrate Collection Paulo Young, Federal University of Paraíba. Twenty-two species were listed, distributed into the classes Asteroidea (2 spp.), Ophiuroidea (16 spp.), Echinoidea (2 spp.), and Holothuroidea (2 spp.). The registered echinoderm diversity adds significantly to our faunistic knowledge, considering that no previous systematic compilation of echinoderms exists for this region.

INTRODUCTION

The coastal zones of the States of Maranhão and Piauí extend, together, for about 700 km (Mai and Loebmann 2010; Silveira 2011), representing 9.5% of the Brazilian littoral. Although this stretch of coastline includes reef areas, it is predominantly sandy beaches, estuaries and mangroves. Together with the adjacent States of Pará and Amapá, Maranhão and Piauí harbour about 50% of the Brazilian estuaries (MMA 2002). The coasts of Maranhão and Piauí are still poorly known, despite the biological importance of the above-mentioned ecosystems (Amaral and Jablonski 2005).

Lack of information on the benthic marine macrofauna from these states represents a conspicuous gap in our knowledge of Brazilian marine biodiversity. Biological inventories for the Phylum Echinodermata are scarce. Present knowledge for the investigated region is based on punctual records and on an unpublished thesis (Albuquerque 1986). The author conducted an extensive survey of the ophiuroids collected by several oceanographic commissions (*e.g.* Canopus, Norte-Nordeste I and II, Pesca Norte, Paraíba, Pernambuco, Itamaracá, Geomar I, II and III, and Pesquisador IV) along the continental shelf between the State of Amapá and the southern coast of the State of Bahia. This study represents one of the most important contributions to the knowledge of ophiuroids from North and Northeastern Brazil, which is restricted in Piauí, to Gondim and Mai (2010), who illustrated some species found in shallow coastal regions in a pictorial guide published by Mai and Loebmann (2010)

Aiming to reduce the gap in the knowledge of Northeastern Brazil biodiversity, we provide an annotated checklist of the Echinodermata recorded along the coast of the States of Maranhão and Piauí, providing information on the occurrence of these species along the littoral region of Northeastern Brazil.

MATERIALS AND METHODS

The present data is based on compilation of references from the literature, and on the identification of echinoderms deposited in the Invertebrate Collection Paulo Young, Department of Systematics and Ecology, Federal University of Paraíba (CIPY/DSE – UFPB). The material in CIPY contains specimens collected in the intertidal region along the coastlines of the States of Maranhão and Piauí between the years of 1982 and 1983 (Figure 1).

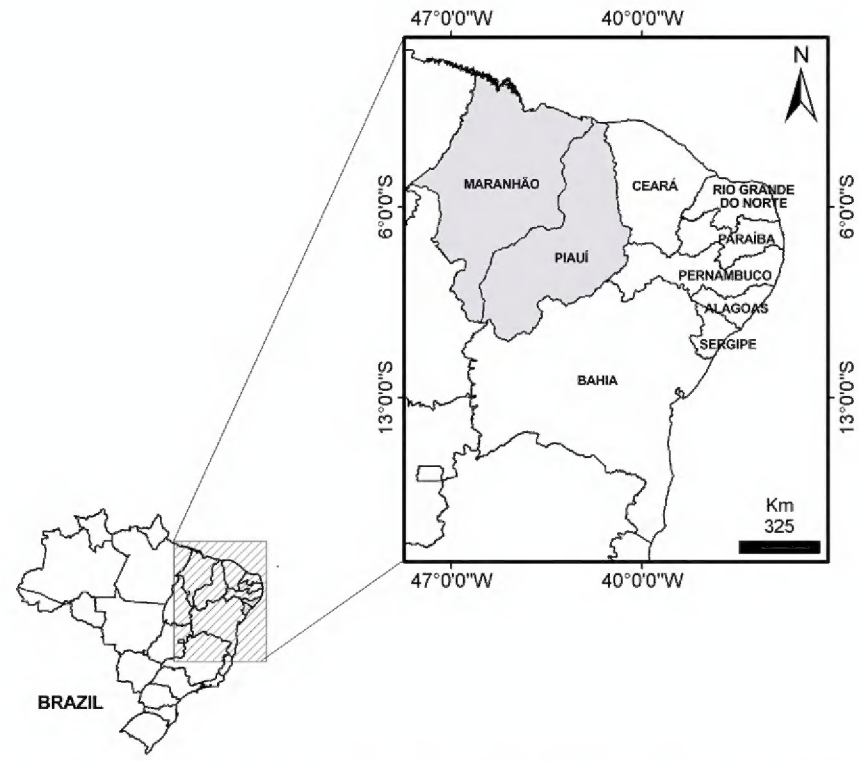

FIGURE 1. Map of Brazil highlighting the Maranhão and Piauí States (in gray).

Taxonomic identifications was based on Thomas (1962), Tommasi (1966; 1970a, b), Clark and Downey (1992), Hendler *et al.* (1995), and Manso *et al.* (2008). All examined material is preserved in ethanol at 70%.

The taxonomic list is organized systematically according to Clark and Downey (1992) for Asteriodea, Stöhr and O'Hara (2007) for Ophiuroidea, Kroh and Smith (2010) for Echinoidea, and Appeltans *et al.* (2012) for Holothuroidea.

Acronyms: UFPB.ECH. (Collection of Echinodermata of Universidade Federal da Paraíba).
Abbreviations: spm., specimen[s].

Results and Discussion

Twenty-two species of echinoderms were inventoried, distributed in the class Asteroidea (2 orders, 2 families, 2 genera, and 2 species), Ophiuroidea (1 order, 8 families, 12 genera, and 16 species), Echinoidea (1 order, 1 family, 2 genera, and 2 species), and Holothuroidea (2 orders, 2 families, 2 genera, and 2 species), which are listed below.

Class Asteroidea de Blainville, 1830

Order Paxillosida Perrier, 1884

Family Luidiidae Verrill, 1900

***Luidia senegalensis* (Lamarck, 1816)**
Figure 2A-B

Diagnosis: Seven to nine (usually nine) long and slender arms. Two regular rows of square lateral paxillae. Inferomarginal plates with two small spines, the upper one shorter than the other. Adambulacral plates with four spines.

Distribution: Florida, Caribbean Sea (Alvarado 2011), and Brazil (Tommasi 1958; Clark 1982). In Northeastern Brazil, in Piauí (Gondim and Mai 2010), Ceará (Lima-Verde 1969), Paraíba (Gondim*et al.* 2008), Pernambuco (Rathbun 1879; Verrill 1915; Fernandes *et al.* 2002; Lima and Fernandes 2009), and Bahia (Brito 1962; Magalhães *et al.* 2005; Manso *et al.* 2008).

Order Spinulosida Perrier, 1884

Family Echinasteridae Verrill, 1870

***Echinaster (Othilia)* sp.**

Diagnosis: See Gondim and Mai (2010).

Distribution: The genus is widely distributed and includes about 30 species currently recognized (Clark and Downey 1992). In Northeastern Brazil it is recorded from Piauí (Gondim and Mai 2010).

Class Ophiuroidea Gray, 1840

Order Ophiurida Müller and Troschel, 1840

Family Ophiomyxidae Ljungman, 1867

***Ophiomyxa flaccida* (Say, 1825)**

Diagnosis: Disk pentagonal, covered by rugose tegument. Marginal interradius with row of 8 to 10 large and overlapping scales. Three enlarged oral papillae, with distal free end totally dentate. Dorsal arm plate fragmented into two. Four to five small and compressed arm spines.

Distribution: Bermuda, Florida, the Bahamas, the Antilles (Hendler *et al.* 1995), Caribbean Sea (Alvarado 2011), and Brazil (Tommasi 1970b; Hendler *et al.* 1995). In Northeastern Brazil, it occurs in Maranhão, Ceará, Rio Grande do Norte (Albuquerque 1986), Paraíba (Gondim *et al.* 2008; 2011), Pernambuco (Albuquerque 1986), Alagoas (personal observation), and Bahia (Magalhães *et al.* 2005; Manso *et al.* 2008).

Family Amphiuridae Ljungman, 1867

***Amphiodia planispina* (v. Martens, 1867)**

Diagnosis: Disk circular, covered by numerous small and imbricating scales. Radial shields slightly longer than wide, united except at proximal ends, where one or two small triangular and elongate scales separate them. Two oral papillae, distal one longer and broader. Two small apical papillae. Three enlarged, compressed, and rhombic arm spines. Two small tentacle scales.

Distribution: Florida (Hendler *et al.* 1995), Caribbean Sea (Alvarado 2011), Brazil, and Argentina (Tommasi 1970b; Bernasconi and D'Agostino 1977). In Northeastern Brazil, it occurs in Maranhão, Ceará, Rio Grande do Norte, Paraíba (Albuquerque and Guille 1991), and Bahia (Thomas 1962; Magalhães *et al.* 2005; Manso *et al.* 2008).

***Microphiopholis atra* (Stimpson, 1852)**

Diagnosis: Disk circular, covered by numerous small and imbricating scales. Radial shields slightly longer than large, separated by 3 to 5 scales. Two oral papillae, distal one twice larger than the other. Two small infradental papillae. Three pointed arm spines. Two elongate tentacle scales, inner one triangular.

Distribution: The Antilles (Tommasi 1970b), Colombia, Venezuela (Alvarado 2011), and Brazil (Tommasi 1970b). In Northeastern Brazil, occurs in Maranhão (Albuquerque 1986), Paraíba (Albuquerque and Guille 1991), Pernambuco (Lima and Fernandes 2009), and Bahia (Albuquerque and Guille 1991; Magalhães *et al.* 2005; Manso *et al.* 2008).

Amphipholis januarii* Ljungman, 1867
Figure 3A-B

Diagnosis: Disk circular or pentagonal. Covered by small and imbricating scales. Radial shields long, narrow, contiguous, separated proximally by a scale. Two elongated and broadened oral papillae. Three to four elongate and rhombic arm spines, the second or third with hyaline denticles on tip.

Distribution: South Carolina, Florida, Texas, the Antilles (Hendler *et al.* 1995), Caribbean Sea (Alvarado 2011), and Brazil (Hendler *et al.* 1995). In Northeastern Brazil occurs in Maranhão (present study), Ceará (Lima-Verde 1969), Paraíba (Gondim*et al.* 2008; 2011), Alagoas (Lima *et al.* 2011), Sergipe (Prata-Oliveira *et al.* 2010), and Bahia (Alves and Cerqueira 2000; Magalhães *et al.* 2005; Manso *et al.* 2008).

Voucher specimens: UFPB.ECH.1375 (1 spm., Ponta do Guajurú, Município de Guimarães, Maranhão, 18.VII.1982).

***Amphipholis squamata* (Delle Chiaje, 1828)**
Figure 3C-D

Diagnosis: Disk circular, covered by large, irregular, and only slightly imbricating scales. Radial scales slightly longer than broad, contiguous, separated proximally by a small scale. Two oral papillae closing oral groove, distal one long and rectangular. Three conical arm spines. Two small, narrow and elongated tentacle scales.

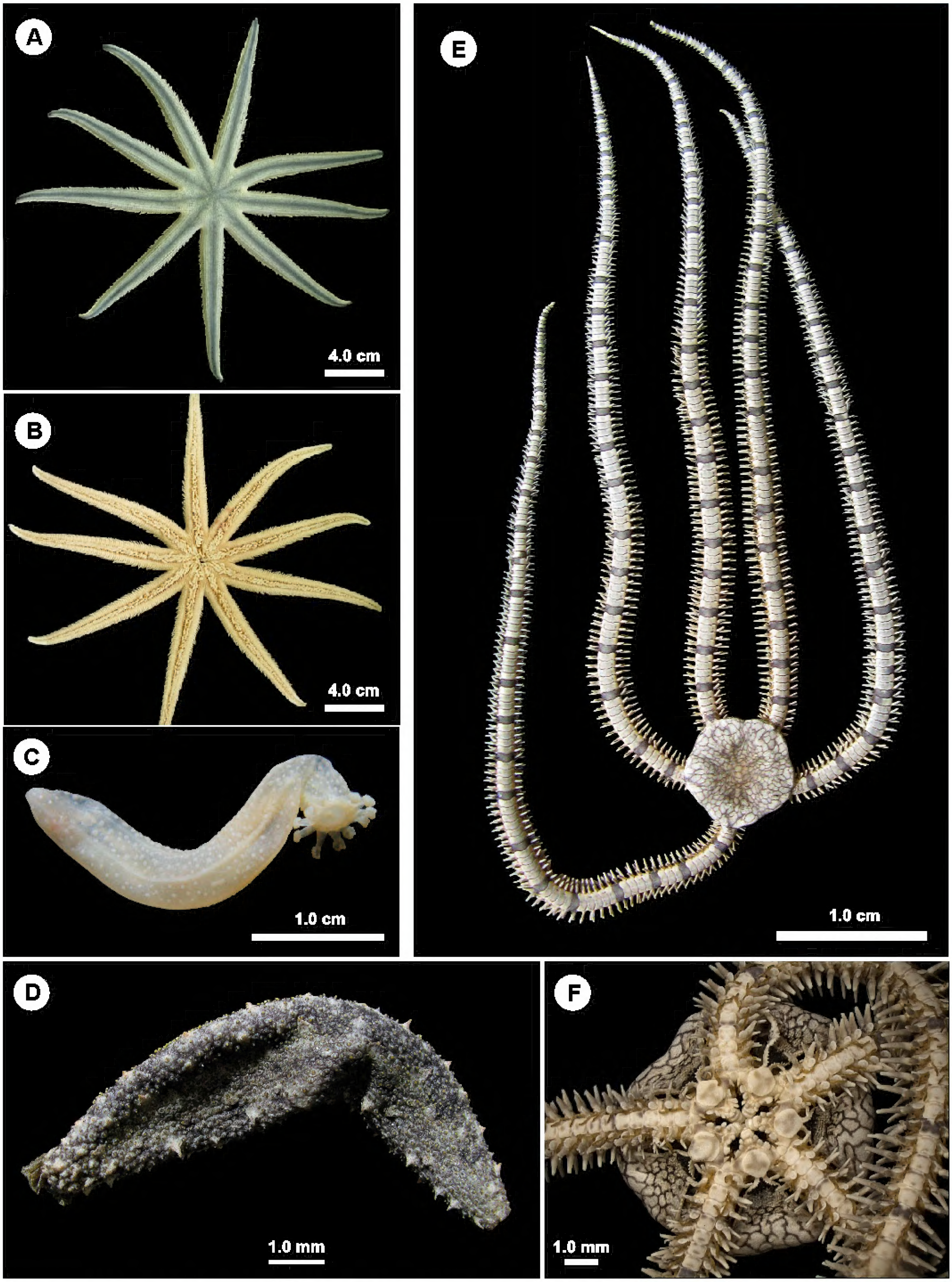

Figure 2. Some echinoderm species recorded for Maranhão and Piauí States. *Luidia senegalensis*, (A) dorsal view and (B) oral view; (C) *Chiridota rotifera*; (D) *Holothuria* (*H.*) *grisea*; *Ophionereis reticulata*, (E) dorsal view and (F) oral view.

Distribution: Broad geographical distribution, occurring in all except the extreme polar regions (Hendler *et al.* 1995). In Northeastern Brazil, found in Maranhão (Albuquerque 1986), Ceará (Lima-Verde 1969), Paraíba (Gondim *et al.* 2008), Alagoas (Lima *et al.* 2011), and Bahia (Magalhães *et al.* 2005; Manso *et al.* 2008).

***Amphiura kinbergi* Ljungman, 1872**

Diagnosis (Modified from Albuquerque 1986)*:* Disk pentagonal. Scales on dorsal surface distributed practically around radial shields. Two oral papillae, separated by a diastema, proximal one filiform. Six to seven arm spines with denticles.

Distribution: Florida, and Brazil (Borges and Amaral 2006). In Northeastern Brazil it occurs in Maranhão, Ceará (Albuquerque and Guile 1991; Borges and Amaral 2006), Alagoas (Lima *et al.* 2011), and Bahia (Magalhães *et al.* 2005; Manso *et al.* 2008).

***Amphiura stimpsoni* Lütken, 1859**

Figure 3E-F

Diagnosis: Disk subpentagonal, covered by imbricating scales of different sizes. Radial shields narrow, almost completely separated along their extension length by two or three broad and elongated scales. Two oral papillae, the distal one spatuliform and the proximal one spiniform, the latter positioned more internally on jaw. Four to five subequal arm spines, with crown of denticles on tip. A single reduced small tentacle scale.

Distribution: The Bahamas, Florida, Texas offshore reefs, the Antilles (Hendler *et al.* 1995), Caribbean Sea (Alvarado 2011), and Brazil (Tommasi 1970b). In Northeastern Brazil, found in Maranhão (Albuquerque 1986), Ceará (Rathbun 1879; Lima-Verde 1969), and Bahia (Magalhães *et al.* 2005).

***Ophiophragmus filograneus* (Lyman, 1875)**

Diagnosis: (Modified from Albuquerque 1986). Disk circular, covered by imbricating scales. The primary rosette is conspicuous and the central primary plate is the largest. Disc margin delimited by a fence of small papillae. Three oral papillae. Three arm spines.

Distribution: Florida (Hendler *et al.* 1995), Belize (Alvarado 2011), and Brazil (Albuquerque 1986). In Northeastern Brazil, recorded only in Maranhão (Albuquerque and Guille 1991).

Family Ophiocomidae Ljungman, 1867

***Ophiopsila riisei* Lütken, 1859**

Diagnosis (Modified from Albuquerque 1986)*:* Disk pentagonal. Radial shields narrow. Three oral papillae. Oral and aboral shields with black punctuations. Seven arm spines. Dorsal arm plate with rows of dark punctuations.

Distribution: The Bahamas, Florida, Caribbean Sea, and Brazil (Hernández-Herrejón *et al.* 2008). In Northeastern Brazil, it occurs in Maranhão, Ceará, Rio Grande do Norte, and Pernambuco (Albuquerque and Guille 1991).

Family OphiolepididaeLjungman, 1867

***Amphipholizona delicata* H.L. Clark, 1915**

Diagnosis (Modified from Albuquerque 1986)*:* Disk circular, covered by large scales (primary rosette evident). Radial shields as large as long, united throughout. Two oral papillae. Apical papillae robust and slightly removed from opponent. Three arm spines on first arm segment, four on second, seven on third, four on fourth and decreasing to three in terminal segments. One tentacle scale (only in the first arm segments).

Distribution: Barbados, and Brazil (Tommasi 1971; Borges *et al.* 2002). In Northeastern Brazil, recorded only in Maranhão (Albuquerque 1986; Albuquerque and Guille 1991).

Family Ophiactidae Matsumoto, 1915

***Ophiactis quinqueradia* (Lütken, 1856)**

Figure 4E-F

Diagnosis: Disk circular to pentagonal, covered by imbricating scales of irregular size. Small spines sParsly distributed on aboral region of disk. Radial shields long and separated over almost full length by three long scales. Two or three small, spatulate, oral papillae. Five arms. Five or six arm spines. Single tentacle scale spatulate.

Distribution: South Carolina (Tommasi 1970b), Bahamas, Florida Keys, Texas, Mexico (Laguarda-Figueiras *et al.* 2009), Caribbean Sea, and Brazil (Hendler *et al.* 1995). In Northeastern Brazil, occurs in Maranhão, Ceará, Rio Grande do Norte, Pernambuco (Albuquerque 1986), Alagoas (Albuquerque 1986; Lima *et al.* 2011), and Bahia (Abrolhos) (Tommasi 1970b; Tommasi and Aron 1988).

***Ophiactis lymani* (Ljungman, 1871)**

Figure 4G-H

Diagnosis: Disk circular, covered by large imbricating scales. Some small spines sparsely distributed over interradius and ventral regions. A small spatulate oral papilla. Six arms. A large and spatulate tentacle scale. Three to four arm filiform spines, the ventral one is the smallest.

Distribution: Virgin Islands, the Bermudas, Tortugas, Cape Verde, and Gulf of Guinea (Tommasi 1970b). In Northeastern Brazil it is found in Maranhão (Albuquerque 1986), Ceará (Lima-Verde 1969; Albuquerque 1986), Paraíba (Young 1986; Gondim *et al.* 2008), Pernambuco (Lima and Fernandes 2009), Alagoas (Lima *et al.* 2011), and Bahia (Magalhães *et al.* 2005; Manso *et al.* 2008).

Voucher specimens: UFPB.ECH.1280 (51 spm., Outeiro Cedral, Maranhão, 19.VII.1982)

***Ophiactis savignyi* (Müller and Troschel, 1842)**

Figure 4C-D

Diagnosis: Disk circular, covered by numerous imbricating scales. Some small spines on scales at the disk margin. Ventral interradius with some spines on the scales. Radial shields large, triangular, contiguous. One oral papilla. Apical papilla well developed and rectangular. Six arms. Six arm spines. Single tentacle scale.

Distribution: Circumtropical (Tommasi 1970b). In Northeastern Brazil the species is found in Maranhão (Albuquerque and Guille 1991), Paraíba (Albuquerque and Guille 1991; Gondim *et al.* 2008; 2011), Pernambuco (Albuquerque and Guille 1991; Fernandes *et al.* 2002;

Lima and Fernandes 2009), Alagoas (Lima *et al.* 2011), and Bahia (including Abrolhos) (Tommasi 1970b; Magalhães *et al.* 2005; Manso *et al.* 2008).

Voucher specimens: UFPB.ECH.2011 (1 spm., Panaquatira, São José do Ribamar, São Luis, Maranhão, 01.VIII.1982).

Family Ophiotrichidae Ljungman, 1867

Ophiothrix (Ophiothrix) angulata* (Say, 1825)

Figure 4A-B

Diagnosis: Disk circular, covered by small, hyaline bifid or trifid spines, also on the radial shields. Radial shields

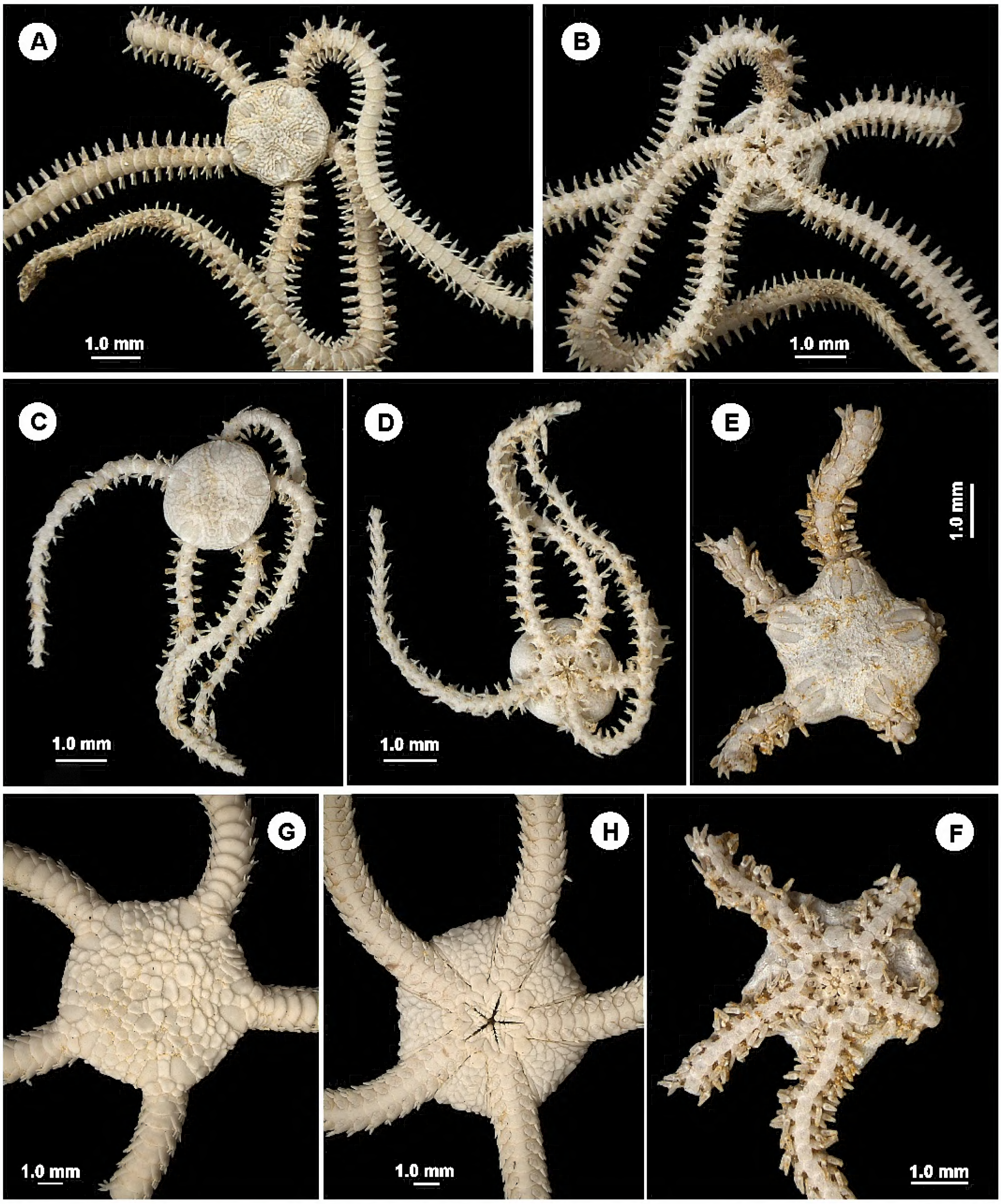

Figure 3. Some echinoderm species recorded for Maranhão and Piauí States. *Amphipholis januarii*, (A) dorsal view and (B) oral view; *Amphipholis squamata*, (C) dorsal view and (D) oral view; *Amphiura stimpsoni*, (E) dorsal view and (F) oral view; *Ophiolepis impressa*, (G) dorsal view and (H) oral view.

longer than wide, separated by row of scales. No oral papillae, but jaws bear terminal clump of dental papillae. Nine long arm spines, vitreous and denticulate, the last one modified into a hook.

Distribution: North Carolina to La Plata River (Argentina) (Tommasi 1970b), Bermuda, North Carolina, Dry Tortugas, the Bahamas, the Antilles (Hendler *et al.* 1995), Caribbean Sea (Alvarado 2011), Brazil, and Uruguay (Hendler *et al.* 1995). In Northeastern Brazil, found in Piauí (Gondim and Mai 2010), Ceará (Lima-Verde 1969), Paraíba (Albuquerque 1986; Gondim *et al.* 2008; 2011), Pernambuco (Albuquerque 1986; Fernandes *et al.* 2002; Lima and Fernandes 2009), Alagoas (Albuquerque 1986; Prata-Oliveira *et al.* 2010; Lima *et al.* 2011), and Bahia (Tommasi 1970b; Alves and Cerqueira 2000; Magalhães *et al.* 2005).

Voucher specimens: UFPB.ECH.1422 (2 spms., Panaquatira, São José do Ribamar, Ilha de São Luiz, Maranhão, 01.VII.1982), UFPB.ECH.1423 (13 spms., Praia de São José do Ribamar, Maranhão, 05.II.1982), UFPB.ECH.1424 (4 spms., Praia Olho de Porco, Ilha de São Luiz, Maranhão, 31.VII.1982), UFPB.ECH.1425 (8 spms., Panaquatira, São José do Ribamar, Ilha de São Luiz, Maranhão, 02.VIII.1982), UFPB.ECH.1510 (4 spms., 2°54'11,5"S; 41°24'26,5"W, Praia da Barra Grande, Cajueiro da Praia, Piauí, 13.VII.2007).

Family Ophionereididae Ljungman, 1867

***Ophionereis reticulata* (Say, 1825)**

Figure 2E-F

Diagnosis: Disk circular to pentagonal, covered by small imbricating scales. Fine reticulation ornamenting disk. Acessory plate of dorsal arm well developed. Genital slits with single row of small papillae. Four oral papillae. Three arm spines. Dark bands on arms covering only one segment, bands separated by light areas, three to six segments wide. Single tentacle scale.

Distribution: Bermuda, the Bahamas, Carolina offshore reefs, Florida, Caribbean Sea, and Brazil (Hendler *et al.* 1995). In Northeastern Brazil the species in recorded in Maranhão (Albuquerque 1986), Piauí (Gondim and Mai 2010), Ceará (Lima-Verde 1969), Paraíba (Gondim *et al.* 2008; 2011), Pernambuco (Fernandes *et al.* 2002; Lima and Fernandes 2009), Alagoas (Lima *et al.* 2011), and Bahia (Magalhães *et al.* 2005).

Voucher specimens: UFPB.ECH.1511 (1 spm., 2°54'11,5"S; 41°24'26,5"W, Praia da Barra Grande, Cajueiro da Praia, Piauí, 13.VII.2007).

Family Ophiolepididae Ljungman, 1867

***Ophiolepis impressa* Lütken, 1859**

Figure 3G-H

Diagnosis (Modified from Albuquerque 1986)*:* Disk circular, covered by thick scales, large, imbricating and intercalated with other smaller scales. Central primary plate rounded, radial primary plates subcircular, largest, and with a tuberose border. Five oral papillae. Three to four arm spines.

Distribution: The Bermudas, Florida, the Bahamas, the Antilles (Tommasi 1970b), Caribbean Sea (Alvarado 2011), and Brazil (Hernández-Herrejón *et al.* 2008). In Northeastern Brazil is found in Maranhão, Ceará, and Rio Grande do Norte (Albuquerque 1986), Alagoas (personal observation), and Bahia (Tommasi and Aron 1988; Magalhães *et al.* 2005).

Class EchinoideaLeske, 1778

Order Clypeasteroida L. Agassiz, 1835

Family Mellitidae Stefanini, 1911

***Mellita quinquiesperforata* (Leske, 1778)**

Diagnosis: Test elliptic, flattened, with small elevation in anterior region. Four gonopores. Five lunules, the anal largest and broadest, remaining ones narrow and of similar length.

Distribution: The Bermudas to Brazil (Tommasi 1966), South Carolina, Florida (Clark 1925), Caribbean Sea (Alvarado 2011), and Argentina up to La Prata River) (Brito 1968).In Northeastern Brazil is common in Maranhão (Rathbun 1879; Tommasi 1957), Piauí (Gondim and Mai 2010), Ceará (Lima-Verde 1969; Rocha-Barreira *et al.* 2001; Martins and Martins de Queiroz 2006; Pequeno and Matthews-Cascon 2011), Paraíba (Gondim *et al.* 2008), Pernambuco (Fernandes *et al.* 2002; Lima and Fernandes 2009), Alagoas (personal observation), Sergipe (Prata-Oliveira *et al.* 2010), and Bahia (Brito 1962; Tommasi 1964; 1966; 1974; Harold and Telfor 1990; Magalhães *et al.* 2005).

***Encope emarginata* (Leske, 1778)**

Diagnosis: Test elliptic, slightly elevated in median region. Five gonopores. Six short and large lunules. Small petaloid with petals of bivium slightly larger than trivium.

Distribution: Florida to La Plata River (Argentina) (Tommasi 1966), Caribbean Sea (Alvarado 2011), and Brazil (Tommasi 1966). In Northeastern Brazil it occurs in Maranhão (Rathbun 1879), Piauí (Gondim and Mai 2010), Ceará (Lima-Verde 1969), Paraíba (Gondim *et al.* 2011), Pernambuco (Rathbun 1879; Fernandes *et al.* 2002; Lima and Fernandes 2009), Alagoas (Prata-Oliveira *et al.* 2010), and Bahia (Magalhães *et al.* 2005; Manso *et al.* 2008).

Class Holothuroidea de Blainville, 1834

Order Aspidochirotida Ludwig, 1894

Family Holothuriidae (Ludwig,1894)

***Holothuria (Halodeima) grisea* (Selenka, 1867)**

Figure 2D

Diagnosis: Body cylindrical, with thick wall. Tube feet concentrated in ventral region. Numerous small warts observed dorsally. From 20 to 25 peltate tentacles. Ossicles of tower type (with up to six marginal columns, found in body wall and in tube feet) and fine bars with one or two perforations at each extremity (found in tentacles).

Distribution: Bahamas, Florida, Puerto Rico, Jamaica, Panama, Colombia, Southern Brazil, and West Africa (Hendler *et al.* 1995). In Northeastern Brazil, found in Piauí (Gondim and Mai 2010), Ceará (Lima-Verde 1969),

Paraíba (Gondim *et al.* 2008), Alagoas (Prata-Oliveira *et al.* 2010), and Bahia (Magalhães *et al.* 2005).

Voucher specimens: UFPB.ECH.212 (2 spms., Praia do Coqueiro, Luiz Correa, Piauí, 05.VIII.1982).

Order Apodida Brandt, 1835

Family Chiridotidae Østergren, 1898

***Chiridota rotifera* (Poutalès, 1851)**

Figure 2C

Diagnosis: Body vermiform, with whitish papillae irregularly distributed along body. Twelve pinnate tentacles, with five pairs of digits each. Ossicles shaped as cart wheels (with six rays and interior margin serrated), C-shaped, and simple plates. Lacking respiratory tree.

Distribution: Bermuda, Florida, Mexico, Caribbean Sea (Hendler *et al.* 1995), and Brazil. In Northeastern Brazil it is found in Piauí (Gondim and Mai 2010), Ceará (Lima-Verde 1969; Martins et al. 2010), Paraíba (Gondim *et al.*

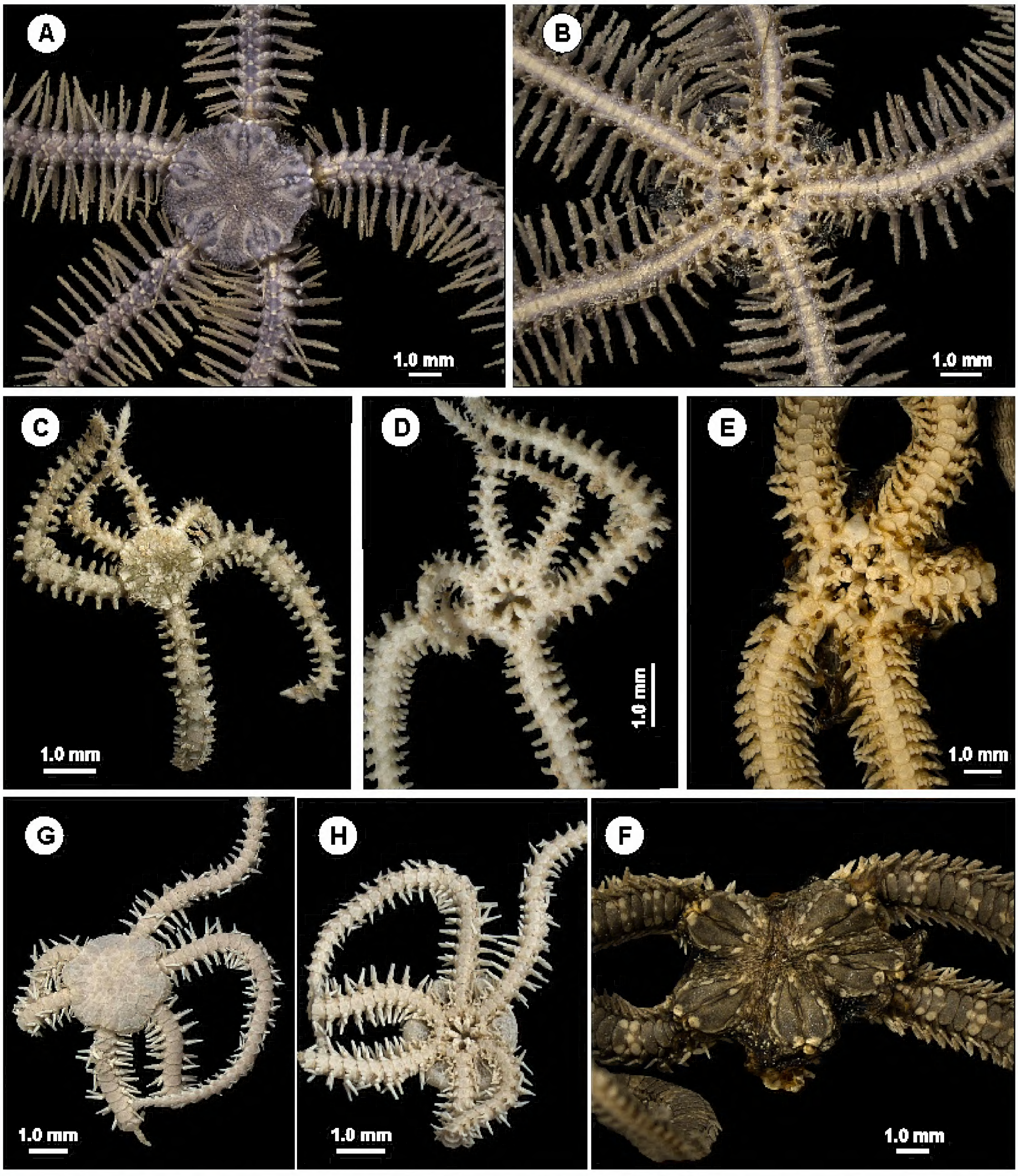

Figure 4. Some echinoderm species recorded for Maranhão and Piauí States. *Ophiothrix* (*O.*) *angulata*, (A) dorsal view and (B) oral view; *Ophiactis savignyi*, (C) dorsal view and (D) oral view; *Ophiactis quinqueradia*, (E) oral view and (F) dorsal view; *Ophiactis lymani*, (G) dorsal view and (H) oral view.

2008; 2011), Alagoas (Prata-Oliveira *et al.* 2010), and Bahia (Rathbun 1879; Magalhães *et al.* 2005).

The echinoderms recorded for the coastal region of the States of Maranhão and Piauí are quite diverse (n = 22), even though this area has not been previously inventoried for the fauna of Echinodermata (Gondim *et al.* 2008). All previously published information is based on sparse samples by different authors (*e.g.* Rathbun 1879; Tommasi 1957; Gondim and Mai 2010).

Among the studied groups, Ophiuroidea (n = 16 spp.) was the most diverse, followed by Asteroidea, Echinoidea, and Holothuroidea (all with 2 spp. each). The higher number is a reflection of the efforts of Albuquerque (1986), who studied brittle stars collected by several oceanographic commissions between the isobaths of 18 and 140 m. The fauna of the remaining classes over the continental shelf of Maranhão and Piauí remains unknown. About 87.5% of the inventoried ophiuroids came from the continental shelf of the State of Maranhão, while the intertidal coastline of this state remains one of the least known marine areas in Brazil. On the other hand, the records of echinoderms for the coast of Piauí result from sporadic observations, being concentrated in shallow coastal waters and representing 34% (8 spp.) of the recorded species.

It is possible to compare these obtained numbers of species to those from other states in northeastern Brazil, for which inventories have already been published, such as for Ceará (Martins and Martins de Queiroz 2006 – 12 spp), Paraíba (Gondim et al. 2008; 2011 – 32 spp.), Pernambuco (Lima and Fernandes 2009 – 35 spp), Alagoas (Miranda et al 2012 – 50 spp), Sergipe (Prata-Oliveira et al. 2010 – 6 spp.) and Bahia (Manso 2004; Magalhães et al. 2005; Manso et al. 2008; Martins et al. 2012a; b – 81 spp.). We then observe that the echinoderm fauna form the coastlines of Maranhão (n = 19 spp.) e Piauí (n = 8 spp.) are relatively low. These low numbers may be correlated with low sampling efforts along these states or may indicate reduced diversity due to the predominance of sandy bottoms, which are commonly less diverse in echinoderms than reef environments. The less-easily accessible offshore reefs located over the continental shelf of the State of Maranhão (including the State Park of Manoel Luiz reefs,) remain to be adequately sampled for echinoderms.

The study of scientific collections remains the life-jacket of systematic knowledge (Zaher and Young 2003). Besides furnishing data over a vast time span (Suarez and Tsutsui 2004), biological records represent more than just results of inventories, becoming available snap-shots of the history of the sampled ecosystems (Zaher and Young 2003; França and Callisto 2007).

The present information from old collections and unpublished data thus represents the broadest faunistic contribution for the Echinodermata living in the northern and most neglected sector of Northeastern Brazil.

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